

LabLink

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Director, Bureau of Laboratories
Sandip Shah, Ph.D., HCLD(ABB)

The Michigan Department of Health and Human Services, Bureau of Laboratories sends our warmest wishes to all of our partners for a safe and healthy 2016.

We hope to strengthen our partnership and continue to serve our community throughout the new year.

In alignment with the strategic priority for Population Health, we will continue to promote and protect the health, wellness, and safety of all Michigan residents.

Important Reminders for 2016!

BOL test requisition and form completion:

Remember to enter the **correct year** on all laboratory test requisitions and forms. Please double check the date of collection. Also remember to double check the date of birth for newborn screening sample requisitions. Incorrect submission data is a common oversight, especially in January, and is a major pre-analytic error that results in unexpected delays for specimen analysis and test results reports.

Please visit our web page at:

<http://www.michigan.gov/mdhhs/bol>

Reminder! Our public email box is:

mdhhsbol@michigan.gov



RICK SNYDER, GOVERNOR | NICK LYON, DIRECTOR



Michigan Health Alert Network (MIHAN)

Author: Shannon Sharp, MT(ASCP)SBB, Bioterrorism Training Coordinator

Are you a member of the Michigan Health Alert Network?

The Michigan Department of Health and Human Services Bureau of Laboratories (MDHHS BOL) utilizes a secure web-based notification system for emergency communication with public health partners throughout the state. MIHAN was created to alert participants and keeps them up to date when conditions occur that could adversely impact the health and safety of Michigan's citizens.

During the H1N1 pandemic flu in 2009, the MIHAN system was the main communication method for sending critical laboratory-specific guidance and updates to our partners. BOL also uses this system to communicate preparedness information as well as non-emergency health-related information such as weekly influenza surveillance updates.

MIHAN participants include hospitals, local public health, EMS agencies, Federally Qualified and Rural Health Clinics, Long Term Care facilities, and emergency management.

If your hospital does not have anyone with "Laboratory" selected as one of their MIHAN roles, you may miss critical lab-specific information because we do not send detailed lab bulletins to the entire MIHAN list.

MIHAN
Michigan Health Alert Network

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Member Login

Username:

Password:

Forgot Username or Password?

Welcome to the Michigan Health Alert Network.

The Michigan Health Alert Network (MIHAN) is a secure, web-based communication system that was established by the Michigan Department of Health and Human Services, Bureau of EMS, Trauma & Preparedness with guidance and funding from the Centers for Disease Control and Prevention. The MIHAN serves to alert key public health, healthcare and public safety personnel of conditions that could adversely impact the health and safety of Michigan's citizens. The system also provides situational awareness about important but non-emergency health-related information.

The MIHAN allows for a two-way, 24/7 flow of information between key points of contact from the State of Michigan, local public health, hospitals, EMS agencies, health clinics, long term care facilities, and emergency management. The key to a rapid and successful response to an outbreak or health emergency is early notification.

During your MIHAN registration you will need to enter contact information and select your professional role (job function), and specific organization. For assistance please use the [Contact Us](#) form, and provide a detailed message including information about where you work.

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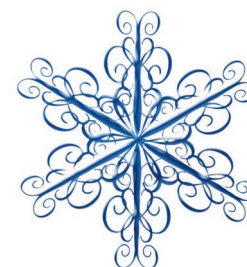
How do I become a member of MIHAN?

Go to the MIHAN website: <https://michiganhan.org/>

Click on the **"Register Now"** button at the bottom of the page. Once your account has been reviewed and approved, you will begin receiving alerts. If you are a current member but have had recent staffing changes that affect who receive alerts, please notify the MIHAN System Project Coordinator, Craig Henry at: henryc1@michigan.gov.

Registering for an account involves:

- ◆ Entering your user name password and secret question
- ◆ Agreeing to the Terms of Service and Privacy Policy
- ◆ Entering in your work information, organization, and title
- ◆ Adding direct points of contact you would like to be alerted
- ◆ Selecting your role and organization



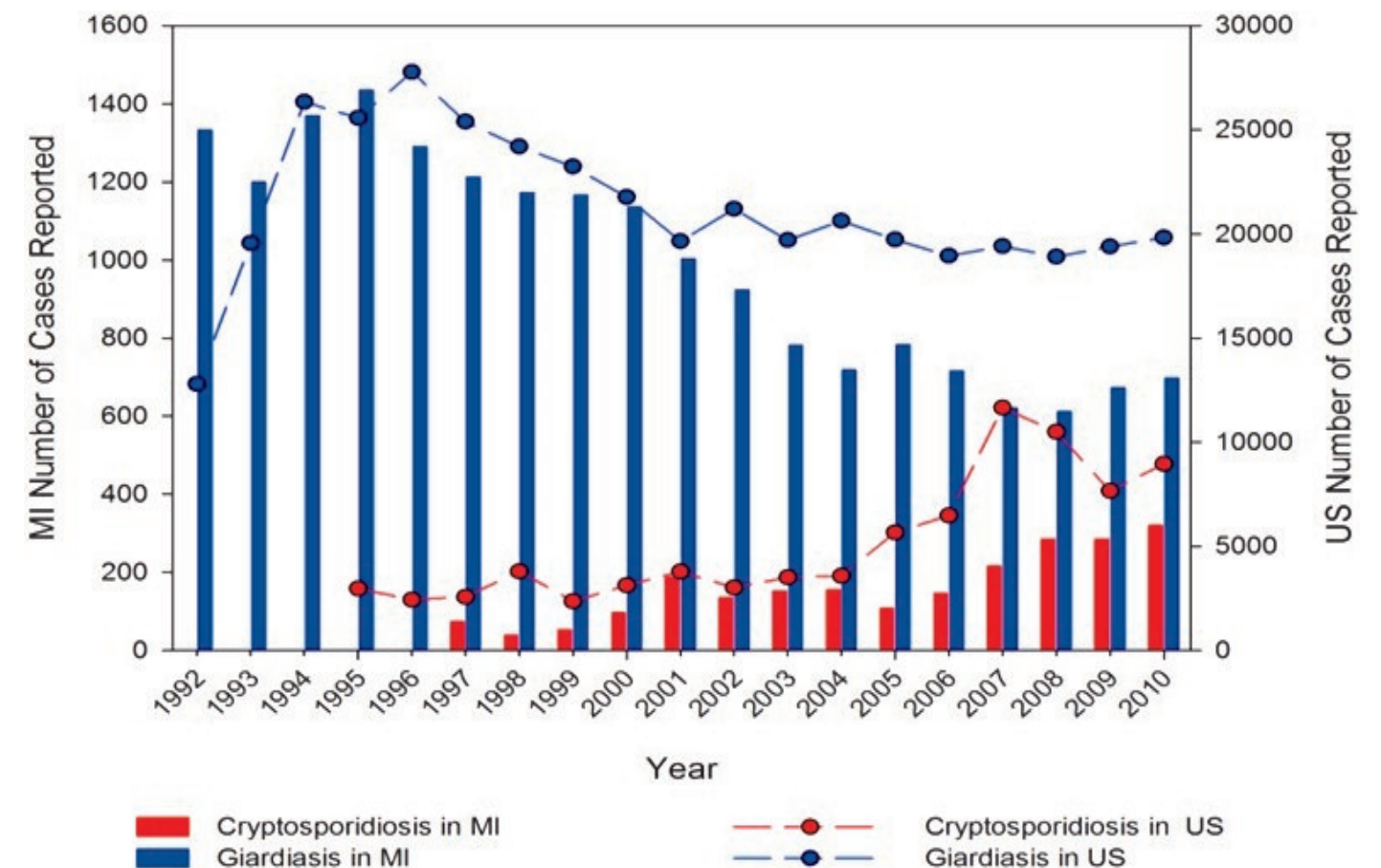
Cryptosporidium Detection at MDHHS

Author: Benjamin Hutton

Cryptosporidium infection (cryptosporidiosis) is an illness caused by the *Cryptosporidium* parasite. In people that are healthy, *Cryptosporidium* infection usually causes a bout of watery diarrhea and the infection typically resolves in a few weeks. In people with compromised immune systems a *Cryptosporidium* infection can be life threatening without the proper treatment.

The parasites are transmitted by the fecal-oral route via human to human contact, human to animal contact, contaminated food, or contaminated water. *Cryptosporidium* has caused many outbreaks globally and are a major concern for water safety because they are resistant to chemical disinfection and are highly infectious. Out of 199 waterborne disease outbreaks caused by parasitic protozoa, reported globally between 2004 and 2010, *Cryptosporidium* and *Giardia* were the most common etiological agents. In children, *Cryptosporidium* is responsible for approximately 20% of diarrheal cases in developing countries and up to 9% in developed countries.

The reporting of giardiasis and cryptosporidiosis in Michigan began in 1992 and 1997, respectively. Cases of giardiasis are more common than cryptosporidiosis. Cryptosporidiosis is most commonly reported for the 0-9 age group. For giardiasis, approximately half of the cases reported are in people under the age of 19. As with the national data, the number of cases of giardiasis in Michigan peaked in the mid-1990s and has declined, whereas cryptosporidiosis cases have increased since the 1990s.



Dreelin, Erin A., Ives, Rebecca L., Molloy, Stephanie, Rose Joan B. (Oct 2014). *Cryptosporidium* and *Giardia* in Surface Water: A Case Study from Michigan, USA to Inform Management of Rural Water Systems. *International Journal of Environmental Research and Public Health*. 2014 Oct, 11(10): 10480-10503. doi: 10.3390/ijerph111010480 Retrieved from URL www.ncbi.nlm.nih.gov/pmc/articles/PMC4210991/

There are two different methods at MDHHS currently used to detect *Cryptosporidium* infections. The first method is acid-fast staining of a prepared slide. The second method, with increased sensitivity, is Direct Fluorescent Antibody (DFA) staining. Both of these methods lack the sensitivity to detect *Cryptosporidium* infections at low levels. This is why MDHHS is developing a Real Time Polymerase Chain Reaction (RT-PCR) assay for the detection of *Cryptosporidium* species. This assay is initially being developed for use with stool specimens with the goal of expanding the application to water samples.

Transformation in Foodborne Outbreak Surveillance

Author: Stephen Dietrich, MS

Since 1998, MDHHS has participated in PulseNet, the national molecular subtyping network for foodborne disease surveillance. PulseNet is an integrated network of over 85 U.S. public health, regulatory, and agriculture laboratories that uses a standardized DNA fingerprinting method on bacterial pathogens obtained from sick patients, food, animals, and the environment. The main pathogens tested are *Salmonella*, shiga toxin producing *E. coli*, and *Listeria monocytogenes*. By performing real time testing and comparing fingerprints from around the country in a national database, PulseNet has revolutionized foodborne epidemiology by detecting outbreaks that were previously undetected and by detecting outbreaks at an earlier stage, thereby reducing the number of people affected.

The technology used by PulseNet at its inception is pulsed field gel electrophoresis (PFGE). PFGE has been very useful, providing a good level of epidemiologic specificity. New technology has emerged and is now reaching the point that it can begin to replace PFGE. Whole genome sequencing (WGS), a next generation sequencing technology, is now being used by MDHHS and many agencies to supplement PFGE. WGS is expected to replace PFGE for routine use in about 3 years. WGS is much more discriminating than PFGE, providing even greater epidemiologic specificity. With WGS, the entire bacterial genome is sequenced. Bioinformatics software allows the sequences to be compared for subtyping purposes. In addition to epidemiologic subtyping, WGS will allow for all characterization of isolates currently done by other methods. The sequence data will identify genus, species, serotype, shiga toxin type, virulence factors, and antimicrobial resistance determinants. WGS will allow consolidation of testing and savings in cost and labor.



WGS has already proven to be important in detecting and analyzing outbreaks. A program for enhanced surveillance of *Listeria* has been in place for two years, which includes routine surveillance of all *Listeria* isolates with WGS as well as PFGE. WGS has been successfully applied to outbreaks of *Salmonella* and *E. coli*, providing finer resolution of isolates than was provided by PFGE. PFGE will continue to be used for foodborne pathogens until WGS can be fully implemented in every public health laboratory. PFGE also will be used for several years for subtyping other types of pathogens until WGS methods are available.

The Bureau of Laboratories Webpage Content Updates

Attention all laboratory system partners. The Bureau of Laboratories is in the process of updating our laboratory web page contents. Please check our web page often for updates to forms, instructions, and other posted materials. Remember to use our new laboratory webpage shortcut. Thank you.

<http://www.michigan.gov/mdhhs/lab>. Please save this address as one of your internet favorites.

LabLink is published quarterly by the Michigan Department of Health and Human Services, Bureau of Laboratories, to provide laboratory information to Michigan health professionals and public health community.

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